

REMARKS

The Office Action dated May 4, 2006, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claim 1 and 5-8 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 9-11 have been withdrawn. Claims 1-8 are submitted for consideration.

Claims 1-8 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out the distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 5-8 have been amended to overcome this rejection. Therefore, Applicants request that this rejection be withdrawn.

Claims 1-8 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,673,323 to Russo. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in independent claim 1.

Claim 1, upon which claims 2-8 depend, recites a tapping screw including a head portion and a shaft portion extending from the head portion, and forming a female screw in a prepared hole formed in an attached member while the tip portion of the shaft portion is screwed into the prepared hole. The shaft portion has a columnar constant diameter portion extending from the head portion and having a constant diameter and a reduced

diameter portion of a truncated cone shape extending from the tip of the constant diameter portion in the direction opposed to the head portion, and reduced in diameter as it is advanced in the direction opposed to the head portion. The shaft portion also includes a spiral screw thread continuously formed over the outer circumferential face of the constant diameter portion and the outer circumferential face of the reduced diameter portion. Plural notch portions are formed in a specific area of the screw thread in the circumferential direction of the shaft portion. All the notch portions have a notch face, a rising wall and a corner portion. At least a portion of the screw thread is lower in height than other screw thread portions which are formed continuously and remains intact on the notch portion.

As outlined below, Applicant submits that the cited reference of Russo does not teach or suggest the elements of claims 1-8.

Russo teaches a self-taping and/or self-carving stud having two or more right angle elongate grooves of alternate length in a tapered thread or projecting helical ribs. The right angle grooves enable tapping debris to accumulate in the grooves to help lock the threads for fastening the stud, particularly in irregular holes. The alternate length of the grooves helps make this stud design unbreakable, thus unbeatable for special situations especially in exhaust manifold applications. See at least the Abstract.

Applicants submit that Russo simply does not teach or suggest each element of claims 1-8, as noted above. Claim 1 recites at least plural notch portions are formed in a specific area of the screw thread in the circumferential direction of the shaft portion, all

the notch portions have a notch face, a rising wall and a corner portion and at least a portion of the screw thread which is lower in height than other screw thread portions which are formed continuously and remains intact on the notch portion. The present invention is characterized in that the notch portions are shallow such that the core diameter of the notch portion is bigger than the core diameter of the screw thread. This characteristic makes a rolling die life longer compared to a product which has deeper notch portions, such as that as disclosed in Russo, where the core diameter of the notch portion is smaller than the core diameter of the screw thread. In embodiments of the present invention, as recited in claim 1, the shallow shape of notch portions screws pushes and crushes attached members, hence, no scrape is made. In Russo, on the other hand, notch portions of the referenced screw thread are deep, where the core diameter of the notch portion is smaller than the core diameter of the screw thread in order to make room to catch scrapes. Also in the present invention, torque constant is reduced by the smaller contact face of the screw thread because corner portions mainly come in contact with a prepared hole if compared to the referenced screw of Russo.

As shown in Russo, the contact face of conventional notch portions, such as the fan-like shape shown in figure 1 and the V-shape shown in figure 2, are comparatively large. In the present invention, on the other hand, the contact face is small because only the periphery of a corner portion is in contact with the attached member. Also it is easy to make the notch portion of the present invention because the notch portion is almost round in shape. Therefore, Applicants respectfully assert that the rejection under 35

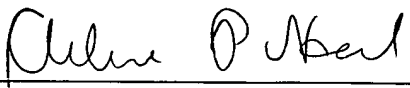
U.S.C. §102(b) should be withdrawn because Russo fails to teach or suggest each feature of claim 1 and hence, dependent claims 2-8 thereon.

As noted previously, claims 1-8 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that all of claims 1-8 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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